

REMARKS

Claims 1, 2, 5, 6, 8, 11-23 are now pending in the application. Claim 5 is amended. Claims 3, 4, 7, 9, 10 were previously cancelled. Claims 11, 12 and 20 remain withdrawn. The Examiner is respectfully requested to reconsider and withdraw the rejection(s) in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 112

Claims 5 and 6 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicant regards as the invention. This rejection is respectfully traversed.

Applicant has amended claim 5 to depend from claim 1 thus rendering the rejection moot.

Reconsideration is respectfully requested.

REJECTION UNDER 35 U.S.C. § 103

Claims 1, 2, 5, 6, 8, 10, 13-19 and 21-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sloan et al (U.S. Pat. No. 2003/0013369) in view of Brueck et al (WO 01/40394 - U.S.equivalent 2002/0193504).

In this regard, the Examiner suggests that Soane et al. discloses a textile treatment agent that includes inorganic nanoparticles that are surface modified and various ingredients such as surfactants and fragrances (abstract, § 13, 81, 89-97, 124, 130 and 143). The Examiner further contends that Soane et al. disclose the features of various textiles such as cotton, wool, silk and synthetic fibers (§ 93), a concentration of nanoparticles of 0.1 to 95% (§96), cationic nanoparticles (§ 97) and a diameter range of

about 1 to 1000 nm (§ 81). It is noted that the inorganic surface modification is also met by the teaching of the silica or silane coated inorganic nanoparticles (§ 120-126, 133 and 134).

The Examiner correctly contends that the Soane et al. reference does not explicitly disclose the inorganic nanoparticle being surface modified by the claimed inorganic compounds; however, the Examiner notes that it is well settled that it is prima facie obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the same purpose. In re *Lindner* 457 F.2d 506,509, 173 USPQ 356,359 (CCPA 1972).

The Examiner further contends that Brueck et al. reference teaches the feature of surfaced modified inorganic particle in the range of 5-40 nm (§51) such as SiO₂ particle modified by ZrO₂ or TiO₂ (§ 58) in a textile treatment composition, concluding it would have been obvious to one of ordinary skill in the art to use the surfaced modification agents and nanoparticle features in the composition of the Soane et al. reference.

Further, the Examiner states that Soane et al. and Brueck et al. disclose the claimed composition but do not explicitly disclose a composition comprising the agents, thickness and diameter ranges in the amounts as those recited by the Applicant.

The Examiner states that regarding the thickness of the layer, given that the Soane et al. and Brueck et al. references disclose nanoparticles being in the same range as applicants to coat the textile (Soane et al.: § 81 and Brueck et al: § 2), it would have been obvious to one of ordinary skill in the art to utilize any of the taught thickness, including those presently claimed, to obtain a suitable composition, e.g. it would have been obvious to optimize the components based on the desired effect - see the various modifications shown in the examples starting on § 99.

The Examiner further states that regarding the inorganic surface modification agent of claims 1, 15 and 21-23, it is noted that the instant claims are directed to a treatment agent and not a method of making the treatment agent. Soane et al. teach the nanoparticles being contacted with a magnesium chloride and sodium chloride (§ 95 and 97) and Brueck et al. teach the modifying agent being ZrO_2 or TiO_2 (§ 58); thus the same resulting effect on the nanoparticle would be expected since similar modifying agents are used.

Applicant respectfully traversed the foregoing rejection.

Upon detailed review of the Brueck et al. publication, Applicant initially notes that Brueck appears to each modifying nanoparticles with organic surface groups, either during synthesis of the particles or afterward. No mention is made of the concept of surface modifying nanoparticles with inorganic constituents. In this regard, the Examiner's attention is directed to paragraphs 54-57 of Brueck et al.

Further, to the extent that inorganic nanoparticles are mentioned in paragraph 58 of Brueck et al, Applicant notes that Brueck discusses the substitution of SiO_2 particles by ZrO_2 and/or TiO_2 nanoparticles. There is no teaching whatsoever of the surface modification of nanoparticles with inorganic constituents.

In view of the foregoing, Applicant submits that the combination of Brueck et al, with the teachings of Sloan et al, fail to support a prima facie case of obviousness. Thus, reconsideration of the rejection is respectfully requested.

Claims 1, 2, 5, 6, 8, 16-19 and 21-23 stand rejected under 35 U.S.C. § 103(a) as being obvious over Zuechner et al (U.S. Pat. Pub No. 2004/0023834) in view of Brueck et al (WO 01/40394 - U.S.equivalent 2002/0193504).

In support of the foregoing rejection, the Examiner suggests that Zuechner et al.

discloses a finishing textile agent that includes inorganic nanoparticles such as silica that are surface modified by various chemicals and additional ingredients such as surfactant, thickeners and perfumes (abstract and § 11, 16-22, 32, 36, 67, 77, 88 and 126). Furthermore, Zuechner et al. discloses the features of various textiles such as cotton (§ 12), a concentration/content of nanoscale particles of 0.01 to 35 % by wt (§ 14-15) and a particle size of 5 to 500 nm (§ 10-11).

The Examiner further contends that the Zuechner et al. reference discloses the claimed invention but does not explicitly disclose the inorganic nanoparticle being surface modified by the claimed inorganic compounds; however, it is noted that it is well settled that it is prima facie obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the same purpose. In re Lindner 457 F,2d 506,509, 173 USPQ 356,359 (CCPA 1972).

The Examiner goes on to state that given that the Brueck et al. reference teaches the feature of surfaced modified inorganic particle in the range of 5-40 nm (§51) such as SiO₂ particle modified by ZrO₂ or TiO₂ (§ 58) in a textile treatment composition, it would have been obvious to one of ordinary skill in the art to use the surfaced modification agents and nanoparticle features in the composition of the Zuechner et al. reference.

The Examiner correctly states that Zuechner et al. and Brueck et al. do not explicitly disclose a composition comprising the agents, thickness and diameter ranges in the amounts as those recited by the Applicant.

The Examiner further contends that given that the Zuechner et al. and Brueck et al. references disclose nanoparticles being in the same range as applicants to coat the textile, it would have been obvious to one of ordinary skill in the art to utilize any of the taught thickness sizes, including those presently claimed, to obtain a suitable

composition, e.g. it would have been obvious to optimize the components based on the desired effect - see the various modifications shown in the examples starting on § 99.

Regarding the inorganic surface modification agent of claims 1, 15 and 21-23, the Examiner notes that the instant claims are directed to a treatment agent and not a method of making the treatment agent. Brueck et al. teach the modifying agent being ZrO_2 or TiO_2 (§ 58); thus the same resulting effect on the nanoparticle would be expected since similar of modifying agent are used.

Applicant also respectfully traverses the foregoing rejection based Zuechner et al. As Applicant noted above, Brueck does not teach the concept of surface modified nanoparticles with inorganic constituents but, rather, at best, teaches the substitution of one inorganic material, SiO_2 with other inorganic materials ZrO_2 and/or TiO_2 . Again, Applicant suggests that the combination of Zuechner and Brueck fail to establish an appropriate prima facie case of obviousness; thus, reconsideration is respectfully requested.

Claims 1, 2, 5, 6, 8, 13-18 and 21-23 stand rejected under 35 U.S.C. § 102(e) as being anticipated by or in the alternative under 35 U.S.C. 103(a) as being obvious over Rohrbaugh et al (U.S. Pat. Pub No. 2002/015634) in view of Brueck et al (WO 01/40394 - U.S.equivalent 2002/0193504). In this regard, the Examiner suggests that Rohrbaugh et al. discloses a coating composition that includes inorganic nanoparticles such as oxides and silicates that are surface modified by various chemicals and additional ingredients such as surfactant, softeners and perfumes (abstract and § 44-46, 58, 59, 123, 124 and 197). Furthermore, the Examiner further contends that Rohrbaugh et al. discloses the features of various textiles such as cotton and synthetic fibers (§ 26), a concentration/content of nanoscale particles of 1 to 100 % by wt and 0.01 to 5% of the

coating composition (§ 79), a particle size of 2 to 750 nm (§ 44) and a cationic particle charged via a Al^{3+} salt (§ 69).

The Examiner goes on to say that the Rohrbaugh et al. reference discloses the claimed invention but does not explicitly disclose the inorganic nanoparticle being surface modified by the claimed inorganic compounds; however, it is noted that it is well settled that it is prima facie obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the same purpose. In re *Lindner* 457 F.2d 506,509, 173 USPQ 356,359 (CCPA 1972).

The Examiner further states that given that the Brueck et al. reference teaches the feature of surfaced modified inorganic particle in the range of 5-40 nm (§51) such as SiO_2 particle modified by ZrO_2 or 702 (§ 58) in a textile treatment composition, it would have been obvious to one of ordinary skill in the art to use the surfaced modification agents and nanoparticle features in the composition of the Rohrbaugh et al. reference.

The foregoing rejection based on Rohrbaugh et al. and/or Rohrbaugh in view of Brueck et al is respectfully traversed.

As the Examiner is well aware, a rejection under 35 U.S.C. §102(b) can only be maintained if a single reference teaches each and every element of the claims. If there are any differences whatsoever between the reference and the claim(s), the rejection cannot be based on 35 U.S.C. §102. Titanium Metals Corp. v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).

Initially, Applicant notes that the reject under §102(e) is improper in that Rohrbaugh fails to teach each and every element of the claimed invention. As the Examiner notes in paragraph 8 of the pending Office Action, "Rohrbaugh et al does not explicitly disclose inorganic compounds being surface modified by the claimed inorganic

compounds". In view of this statement, which is accurate based on a review of Rohrbaugh, Applicant requests that the Examiner withdraw this rejection as being improper.

As to the §103(a) rejection based on Rohrbaugh in view of Brueck, Applicant has made it clear that Brueck fails to teach or disclose surface modifications of nanoparticles with inorganic constituents. As such, the combination of Rohrbaugh in view of Brueck fails to establish an appropriate prima facie basis for an obviousness rejection. Reconsideration of this rejection is also requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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